ABSTRACT

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Title of diploma thesis: Synthesis of chiral ionic liquids

The aim of my diploma thesis was to synthesize series of chiral ionic liquids, which would differ at the chiral centre, leading to possible libraries, either derived from (*S*)-hexadecylglycine, *L*-alanine, *D*-phenylglycine or *L*-serine. The ester scaffold of amino acid derived ionic liquids was modified by varying alkyl chain length. The polar edge of the final products resulted from the reaction of bromoacetyl intermediates with their nucleophilic counterparts.

However, the first part of the proposed synthesis leading to (*S*)-hexadecylglycine derivatives wasn´t successful. The further part of the thesis describes the efficient preparation of novel ionic liquids derived from *L*-alanine (nine compounds) and *D*-phenylglycine (three compounds). Unfortunately, the final ionic liquids based on *L*-serine structure could not be prepared due to problems with acylation of appropriate intermediate.

The final products will undergo a screening for the capability as chiral selectors in micellar electrokinetic chromatography, which could possibly lead to chiral recognition ability. However, the first four screened derivatives didn´t display efficient activity.